

March 14, 1989

TO: File

FROM: D. Wayne Hedberg, Reclamation Hydrologist *DWH*

RE: Field Inspection, Jumbo Mining Company, Drum Mine,
M/027/007, and Drum Mountain Project, M/023/013, Millard
and Juab Counties, Utah

On March 10, 1989, Division staff members, Wayne Hedberg, Holland Shepherd and Scott Johnson inspected the Drum Mine site. The mine is currently operated by Jumbo Mining Company. We met with Mr. Robert Moore, who is the operations manager at the Drum Mine.

The purpose of the mine inspection was to resolve some technical questions with regard to the permitting of the Drum Mountain Project. Mr. Moore indicated that mining operations at the Drum Mine had been reactivated in October 1988. Leaching operations were terminated some time in November, due to freezing problems at the mine site.

Mr. Moore indicated that heap leaching operations had resumed a week to ten days prior to our inspection. Leaching was currently limited to highgrade pad #2. At the time of our inspection, the entire mining crew was out working on the main water supply line to the mine site. They were trying to locate and repair an apparent obstruction in the line which was restricting the flow. Mr. Moore indicated that underground operations had commenced in the #1 pit, also during October of 1988. The ore which has been removed from the underground mine is being crushed, stockpiled and leached at the southern end of the highgrade #2 leach pad. Mr. Moore indicated that a contract has also been let to begin preliminary striping operations at the #2 pit to expose an extension of mineable ore reserves in one end of the pit. Work in this pit should commence within the next couple of days.

Mr. Moore gave Division staff members an areal overview of the Drum Mine which included the existing waste dumps, the heap leach pads, the mined strip pits, the new underground mine expansion, and the revegetation test areas which were implemented voluntarily by the operator. A contour map, received March 2, 1988, of the Drum Mine, was used as a basis for the tour of the mining property. The following areas have been reseeded by the operator:

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- 1) A two acre test plot on waste dump #1,
- 2) all of the top of waste dump #2,
- 3) approximately one acre of the outslopes on waste dump #5,
- 4) all the surface area of waste dump #3, and
- 5) a regraded, flattened area immediately east, southeast of pit #2 (approximately 1 1/2 to 2 acres in extent).

Mr. Moore indicated that Western States previously approved revegetation seed mix was used. No topsoil, fertilizer or mulch was utilized. All areas were broadcast seeded at an estimated rate of 15 to 20 lb. per acre. No seedling germination was noted during our inspection.

Upon examination of the existing pit disturbances at the Drum Mine, it was noted that several additional areas could be reclaimed or at least reseeded by the operator upon final reclamation. These areas were not highlighted on the March 2, 1989 Drum Mine contour map of disturbed areas.

A borrow area was inspected that was used by Western States Minerals Corporation during their initial development of the Drum Mine site. This area has been recontoured and left to revegetate itself naturally. The area is approximately 3 acres. The vegetation that currently exists on this area is predominately halogeton and cheat grass. No perennial species were observed on this disturbed area, although a number were noted to exist adjacent to the site. This borrow area is outside the fenced boundaries of the Drum Mine and was regraded in 1985. The adjacent area has been very heavily grazed by sheep during the winter months. Mr. Moore was informed that it was likely that the Division would require Jumbo Mining Company to reseed this area with the approved seed mix for the Drum Mine.

We asked Mr. Moore to show us where the existing topsoil stockpiles were located. He indicated that of the locations that were highlighted on previous maps, there is only one area, to his knowledge, that has any topsoil remaining. He speculated that Western States may have salvaged topsoil initially, but because of a lack of fines within the mine area, it is likely that the stockpiled topsoil was used as fill material during construction of the mine site. The one area that was visited has less than 2,000 cu. yards of stockpiled topsoil remaining (visual estimate). It was apparent that there had been more material stockpiled previously, but that most of this material had, at some time, been removed and used elsewhere. The Division staff informed Mr. Moore that this topsoiling deficiency was a major permitting concern. This deficiency will need to be resolved between Jumbo Mining Company and Western States Minerals Corporation during finalization of the permit transfer process.

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During the inspection of wastedump #1, it was noted that a waste disposal pit was active on top of the dump. A large trench had been excavated and extraneous mining waste and debris was being disposed of within this trench. Of particular interest was a number of crushed sodium cyanide barrels, that were disposed of in the pit. When questioned as to the authority to dispose of these barrels in this fashion, Mr. Moore indicated that it was common practice for the barrels to be rinsed, crushed and buried in this manner. We informed him that we would verify this through contact with the appropriate regulatory authorities who permit waste disposal areas of this type. Mr. Moore indicated that many of the cyanide barrels had been disposed of at this site, by the authorities who cleaned up last summer's cyanide waste spill which occurred along Interstate 15.

After completing our site inspection of the Drum Mine, we proceeded to tour the adjacent properties associated with the Drum Mountain Project. These new properties include the Alto-Ibex mine sites, the Keystone and Monarch test pits, and the Mizpah pit. The Monarch and the Mizpah pit locations were not visited due to insufficient time. The Mizpah pit has not been formally included as part of the permit application to date. Mr. Moore indicated that Jumbo was still preparing the environmental base line and basic pit design information for this proposed development. He did not know when this work would be completed and submitted to the Division for formal review.

It was confirmed during the site inspection of the Alto-Ibex properties that a topsoiling variance would be appropriate. The terrain is very steep, and is very rocky in nature. The area has been previously disturbed and has very shallow and spotty topsoil resources. The Keystone test pit area does appear to have suitable plant growth medium available, which warrants salvaging by the operator. We informed Mr. Moore that all practical measures must be taken to salvage as much of this topsoil as possible. The same topsoil stockpiling requirements would apply to the Monarch test pit and the Mizpah pit area prior to their development.

It was also noted, during the inspection of the Alto-Ibex pit area that the proposed location for the waste dumps were probably the most practical. Any attempt to relocate the waste dumps to another area would prove very cost prohibitive and counter productive due to the additional disturbed area which would be created.

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Prior to leaving the mine site, we discussed the Division's December 6, 1988 deficiency letter and the operator's February 3, 1989 response. It became apparent that there was some confusion regarding the Division's letter. Mr. Moore indicated that he, and Mr. King, felt that the questions which were asked by the Division were meant to apply to the previously approved Drum Mine permit application. I informed Mr. Moore that this was not the intent of the letter, that the questions were principally directed toward the Drum Mountain Project, which included the Alto-Ibex, Monarch, and Keystone test pits. Any inference to the Drum Mine was directed toward re-evaluating the reclamation surety for that property to include the new proposed mining areas which were included under the July 14, 1988 application for the Drum Mountain Project.

I explained that it was the intention of the Division to permit the Drum Mountain Project proposal as a revision to the Drum Mine. The Division had not re-evaluated the Drum Mine permit as part of its review of the Drum Mountain Project application. Mr. Moore indicated that Jumbo Mining Company wanted to request variances to the previously approved Drum Mine plan. Variances are requested for the outcrops of the waste dumps and the heap leach pads. The operator wishes to leave all slopes at the angle of repose, which is approximately 38°. The staff indicated to Mr. Moore, that this request would be evaluated during our technical review of the operator's February 1989 response.

I agreed to contact Mr. E. B. King of Jumbo Mining Company in the near future, to confirm a tentative March 27, 1989 meeting in the Division offices. It is hoped that the remaining technical concerns can be resolved with the operator at that time so that mining operations can continue and the permitting process can be finalized.

jb
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